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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,711	04/24/2001	Christian Voye	FA1000 US NA	4824

23906 7590 11/24/2004

E I DU PONT DE NEMOURS AND COMPANY
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WILMINGTON, DE 19805

EXAMINER	
SEALEY, LANCE W	
ART UNIT	**PAPER NUMBER**
2671	

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/840,711	VOYE ET AL.	
	Examiner	Art Unit	
	Lance W. Sealey	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2004* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *14 and 15* is/are allowed.

6)☒ Claim(s) *1-4, 7 and 9-13* is/are rejected.

7)☒ Claim(s) *5,6 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Allowed and Allowable Subject Matter

1. Claims 14 and 15 are allowed, and claims 5-6 and 8 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

2. The prior art does not anticipate or suggest, in a process for the generation of a computer image of a coated, three-dimensional object comprising the step of applying at least a relevant coating layer on at least two test panels coated in a horizontal orientation and two test panels coated in a vertical orientation, and storing the relevant optical data with assignment of the relevant orientation prevailing while the test panels are being coated, and the relevant optical data are selected accordingly when assigned to each individual polygonal area (claim 5); and optical data measured as a function of angle are stored with assignment (the word "assignment" is underlined to emphasize why this claim limitation is allowable) of the relevant angles selected from the group consisting of observation angles, illumination angles and combinations thereof; and further wherein the optical data measured as a function of angle are assigned to each individual polygon area as a function of an observer and at least one illumination source (claim 8). Claim 14 is allowed because it incorporates the allowable material of claim 5. Claim 6 is allowable because it depends on claim 5. Claim 15 is allowed because it depends on allowed claim 14.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was

made.

4. Claims 1-3 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable by Shinohara (U.S. Pat. No. 5,877,769) in view of Numata et al ("Numata," U.S. Pat. No. 6,539,325).

5. Shinohara, in disclosing an image processing apparatus and method, also discloses, with respect to claim 1(a), the generation of a computer image of a coated, three-dimensional object, claim 1(d), facetting the visible surface(s) of a three-dimensional object by computer into a sufficient number of flat polygonal areas each being sufficiently small for the sufficiently accurate description of the surface topography, claim 1(e), assigning the relevant set of coating parameters and associated optical data in each case to each individual polygonal area by computer, and claim 1(f), assembling the polygonal areas into a computer image of the three-dimensional object. A computer image of a coated three-dimensional object (the claim 1(a) element) is disclosed at col.3, l.50 to col.4, l.6 (the objects in FIG.1 are three-dimensional and texture is a coating); the claim 1(d) element is disclosed at col.3, ll.64-66; the claim 1(e) element is disclosed at the second sentence of the Abstract (texture is comprised of optical surface properties (viewpoint data, col.3, l.67 to col.4, l.6) and coating parameters (color, col.4, l.8)); and the claim 1(f) element is disclosed at the second sentence of the Abstract ("filling a polygon to generate image data").

6. However, Shinohara does not disclose, with respect to claim 1(a), a process comprising the steps of applying at least different relevant coating layers under the influence of a set of coating parameters; claim 1(b), taking a plurality of measurements of at least one optical surface property as a function of the set of coating parameters selected on application of the relevant coating layer on each panel; or claim 1(c), storing the optical data in a datafile with assignment of the relevant set of coating parameters. These elements are disclosed by the Numata color matching apparatus for automotive repair paints. The claim 1(a) element of applying at least different relevant coating layers under the influence of a set of coating parameters (colorants, pigments, coating thickness) is disclosed at col.9, ll.15-39. Applying the relevant coating parameters on at least two test panels under the influence of a set of coating parameters which differs with respect to each panel is disclosed at col.9,

ll.25-32. The claim 1(b) element is disclosed at col.9, ll.20-25 (spectral reflectance and flop value). The claim 1(c) element is disclosed at col.16, ll.45-61.

7. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Numata color matching apparatus with the Shinohara image processing apparatus by adding the Numata spectrophotometer **3** (FIG.2) and code from the Numata personal computer **1** (FIG.2) to the Shinohara rendering engine **15** (FIG.4). Such a combination of these two references would amount to applying the real-life paint measurement of Numata to the texture of Shinohara and allow the successful matching of automotive repair paint with existing paints with high precision in a reduced number of steps even by a novice (Numata, Abstract).

8. With respect to claim 2, Numata discloses a single-layer top coating consisting of the relevant coating layer at col.6, ll.57-60.

9. Concerning claim 3, Numata discloses the relevant coating layer participating as one layer in a multi-layer coating in col.5, ll.46-55.

10. With respect to claim 9, Shinohara discloses the computer image as a representation selected from the group consisting of i) representation of an individual optical surface property and ii) representation of a combination of at least two optical surface properties; i) is disclosed at the second sentence of the Abstract (texture).

11. Concerning claim 10, Shinohara discloses a) a visually perceptible three-dimensional representation of a computer image (FIG.1). Regarding claim 12, Shinohara discloses a real-time representation of a computer image at col.3, l.63 (real-time). Shinohara does not directly disclose the "interactive" component of claim 12, but it would have been obvious to a person skilled in the art at the time the invention was made to disclose in interactive image because manipulation of an image by an operator is mentioned in the Description of the Related Art section: "simulations and games are provided by computer programs in such a manner that each

object of an image or the viewpoint on the display is moved in accordance with manipulation by an operator" (col.1, ll.15-19).

12. Regarding claim 11, Shinohara does not explicitly disclose the computer image existing only as a data set. However, at the second sentence of the Abstract, Shinohara discloses a frame buffer memory **16** (FIG.4). It would have been obvious to a person skilled in the art at the time this invention was made that a frame buffer would constitute a data set during the time it is storing an individual 3D image.

13. Concerning claim 13, neither Shinohara nor Numata explicitly disclose the three-dimensional object as being selected from the group consisting of motor vehicle bodies and body parts. However, Numata teaches the use of automotive paint (col.3, ll.40-41). If automotive paint is applied to the texture of the 3D object in Shinohara, it would have been obvious to a person with ordinary skill in the art at the time this invention was made for the object in Shinohara to represent a 3D automotive body part.

14. Accordingly, in view of the foregoing, claims 1-3 and 9-13 are rendered unpatentable under 35 U.S.C. 103(a) by Shinohara and Numata.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable by Shinohara in view of Numata and further in view of Rupieper et al. ("Rupieper," U.S. Pat. No. 5,991,042).

16. Neither Shinohara nor Numata disclose the two test panels assuming a position selected from the group consisting of a horizontal orientation and a vertical orientation. However, this element is disclosed by Rupieper at col.2, l.60, to col.3, l.5.

17. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Shinohara-Numata apparatus with the teaching of Rupieper. Such a combination of these references would save time by drying the test panels more quickly (Rupieper, col.3, ll.1-5).

18. Accordingly, in view of the foregoing, claim 4 is rendered unpatentable under 35 U.S.C. 103(a) by Shinohara, Numata and Rupieper.

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable by Shinohara in view of Numata and further in view of applicants' admitted prior art.

20. Regarding claim 7, the applicants admit that these elements are either disclosed by the BYK-Gardner Wave-scan product ("Wave-scan"), or they are known to those skilled in the art. According to p.5 of the specification, Wave-scan performs non-angle-dependent (or "angle-independent" measurements, as the specification characterizes them) measurements (ll.15-16), visual determinations of pitting and sagging limits (ll.16-17), colorimetric measurements on single-color coatings (ll.17-18) and measurements of surface structure (ll.18-19). Furthermore, the applicants admit that taking angle-dependent colorimetric measurements is known to those skilled in the art (ll.35-36).

21. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Shinohara-Numata apparatus with the teaching of the applicants' admitted prior art. Optical measurements help to evaluate how a coating will appear.

22. Accordingly, in view of the foregoing, claim 7 is rendered unpatentable under 35 U.S.C. 103(a) by Shinohara, Numata and applicants' admitted prior art.

Response to Remarks

23. In this latest response, the applicants state that a *prima facie* case for obviousness in combining Numata with Shinohara to reject claims 1-3 and 9-13 has not been successfully made because Shinohara and Numata are not combinable. The applicants maintain that Shinohara and Numata are not combinable because the Numata conception of what is an object is different from the Shinohara view of an object.

24. However, Numata was not being used, in the last Office action, to reject any applicant claim limitation that discloses an object. In claim 13, the Numata automotive paint is applied to the texture of the 3D object in Shinohara. Therefore, the *prima facie* case made in the last Office action for the rejection of claims 1-3 and 9-

13 by Shinohara and Numata is complete, and these rejections, along with the rejections of claims 4 and 7, still stand.

Action is Final

25. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the Office should be directed to the examiner, Lance Sealey, whose telephone number is (703) 305-0026. He can be reached from 7:00 am-3:30 pm Monday-Friday EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

MS AF

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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